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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Steven D. Lacy et al.
Serial No. : 09/420,334
Filed : October 18, 1999
Title : GRAPHIC DESIGN OF COMBINATORIAL MATERIAL LIBRARIES

Art Unit : 2174
Examiner : Crescelle N. Dela Torre

Commissioner for Patents
Washington, D.C. 20231

RESPONSE

In response to the action mailed August 6, 2002, please amend the application as follows:

In the specification:

Please replace the paragraph beginning at page 22, line 32 with the following rewritten paragraph:

B1

The use of subtypes provides the user additional flexibility in designing a library using equations. For example, a user may design a library for copolymerizing pairs of monomers, with the monomers being added at different times during the polymerization reaction. By defining two chemical subtypes – for example, "first monomer" and "second monomer" – under single chemical type "monomer", the user may define the total amount of combined monomer using one equation (e.g., [(mg) monomer = 0.2 Total Mass]), while defining the ratio of the first monomer to the second monomer using a second equation (e.g., [(mg) first monomer = 0.3 second monomer]).

Please replace the paragraph beginning at page 29, line 31 with the following rewritten paragraph:

B2

A library of such materials can be a physical array of candidate materials, comprising a substrate and two or more different candidate materials, and preferably four or more

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I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

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different candidate materials at separate portions of the substrate, corresponding to library members. Each candidate material can consist essentially of two components (or source materials -- *e.g.*, a combination of sources A and B). Alternatively, additional components can be incorporated in the library design, resulting in libraries of diverse materials having compositions that are essentially ternary, quaternary or higher order. Such higher-order compositions can be designed to include the same components (*e.g.*, A, B and C) in each composition, but in varying amounts or ratios, or alternatively, to include different components (*e.g.*, A, B and C; A, B and D; A, B and E; A, B and F, etc.) in two or more of the compositions. In one preferred library, there is a spatially addressable array of materials that comprises a substrate having a surface and nine or more materials having different compositions at nine or more discrete regions of the substrate surface, with each material-containing region consisting essentially of one material. The nine or more materials preferably comprising two or more common components of interest, A and B, with the amount of at least one of the common components, A, preferably varying incrementally and uniformly between the nine or more materials, such that the nine or more materials form a uniform compositional gradient with respect to component A. The gradient can be linear, exponential, *etc.*, as described above. The amount of one or more additional components (*e.g.*, component B) can also vary. Non-gradient applications are also considered, as explained above in connection with the various mappings. In a particularly preferred library, the array comprises eleven or more materials at eleven or more discrete regions of the substrate, and at least one of the materials comprises component A and an essential absence of component B.

In the claims:

Please cancel claims 79-90 without prejudice.

Please amend claims 1-3, 14, 15, 19, 20, 30, 36, 37-72, and 74-78 as follows:

1. (Amended) A computer-implemented method for generating a library design for a combinatorial library of materials, comprising:

defining one or more sources and one or more destinations, each source being electronic data representing a component to be used in preparing the combinatorial library and each